



Arizona has a sizable and rapidly growing bioscience industry. State bioscience firms employed 25,686 in 2016 in 1,310 individual business establishments. Industry employment has grown by 9 percent since 2014, twice the growth rate of the nation, with four of the five major subsectors adding jobs during the period. Both drugs and pharmaceuticals and research, testing and medical labs have experienced double-digit job growth since 2014. Arizona inventors have been awarded nearly 2,000 bioscience-related patents since 2014, among the second quintile of states in patent activity. Since 2015, NIH awards to Arizona institutions have increased, reaching \$189 million in FY 2017.

Bioscience Performance Metrics

Summary of State Performance in Selected Bioscience-related Metrics

Metric	Arizona	United States	Quintile
Bioscience Industry, 2016			
Bioscience Industry Employment	25,686	1,743,639	III
Bioscience Industry Location Quotient	0.78	n/a	III
Bioscience Industry Establishments	1,310	85,702	III
Academic Bioscience R&D Expenditures, FY 2016			
Bioscience R&D (\$ thousands)	\$459,706	\$41,972,205	III
Bioscience Share of Total R&D	43%	62%	V
Bioscience R&D Per Capita	\$67	\$130	V
NIH Funding, FY 2017			
Funding (\$ thousands)	\$189,017	\$26,150,485	III
Funding Per Capita	\$27	\$80	IV
Bioscience Venture Capital Investments, 2014-17 (\$ millions)	\$296.42	\$66,168.62	III
Bioscience and Related Patents, 2014-17	1,967	102,862	II

State ranking figures for bioscience performance metrics are calculated as quintiles, where I = top quintile, III = middle quintile, and V = bottom quintile. For source notes, see end of State Profile.

Industry Subsector	Arizona		United States	
	2016	2014-2016 Change	2016	2014-2016 Change
Agricultural Feedstock and Industrial Biosciences				
Establishments	11	-21.4%	1,709	-3.2%
Employment	594	-0.2%	68,027	-1.2%
Location Quotient	0.46		n/a	
Direct-Effect Employment Multiplier	4.93			
Total Employment Impact	2,926			
Average Annual Wage	\$51,515	-3.4%	\$80,961	2.7%
Bioscience-Related Distribution				
Establishments	715	-3.4%	39,149	3.8%
Employment	8,147	4.0%	469,640	3.7%
Location Quotient	0.92		n/a	
Direct-Effect Employment Multiplier	2.43			
Total Employment Impact	19,830			
Average Annual Wage	\$96,295	1.1%	\$93,677	2.7%
Drugs and Pharmaceuticals				
Establishments	58	23.4%	3,754	13.7%
Employment	2,277	22.0%	299,113	2.0%
Location Quotient	0.40		n/a	
Direct-Effect Employment Multiplier	6.18			
Total Employment Impact	14,070			
Average Annual Wage	\$55,766	2.7%	\$113,815	-3.2%
Medical Devices and Equipment				
Establishments	109	1.9%	8,083	5.9%
Employment	6,185	1.7%	359,293	2.9%
Location Quotient	0.91		n/a	
Direct-Effect Employment Multiplier	3.06			
Total Employment Impact	18,912			
Average Annual Wage	\$69,823	3.7%	\$84,746	6.5%
Research, Testing, and Medical Laboratories				
Establishments	417	6.0%	33,007	13.1%
Employment	8,483	18.1%	547,566	8.2%
Location Quotient	0.82		n/a	
Direct-Effect Employment Multiplier	2.21			
Total Employment Impact	18,763			
Average Annual Wage	\$73,630	8.4%	\$106,942	5.5%
Total Bioscience Industry				
Establishments	1,310	0.7%	85,702	7.7%
Employment	25,686	9.0%	1,743,639	4.4%
Location Quotient	0.78		n/a	
Direct-Effect Employment Multiplier	2.90			
Total Employment Impact	74,501			
Average Annual Wage	\$77,807	3.2%	\$98,961	3.1%
Total Private Sector				
Establishments	133,397	-2.7%	9,243,034	3.4%
Employment	2,274,567	5.9%	120,884,570	4.2%
Average Annual Wage	\$48,081	3.4%	\$53,354	4.3%

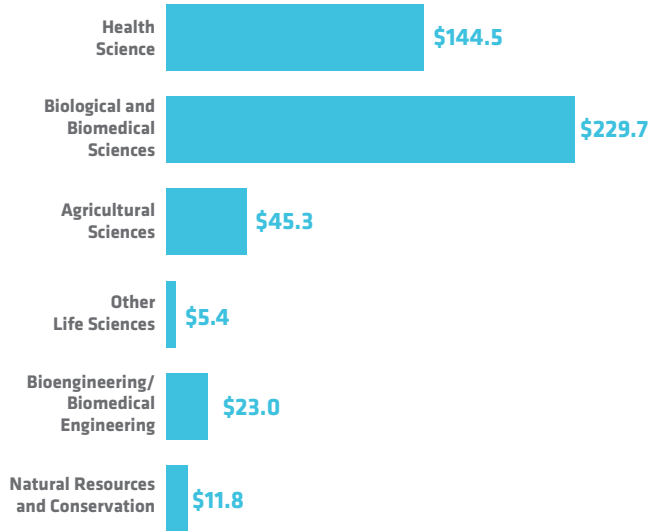
Note: U.S. employment metrics include Puerto Rico.

Bioscience Research in Arizona

Bioscience Academic R&D Expenditures

\$ Millions

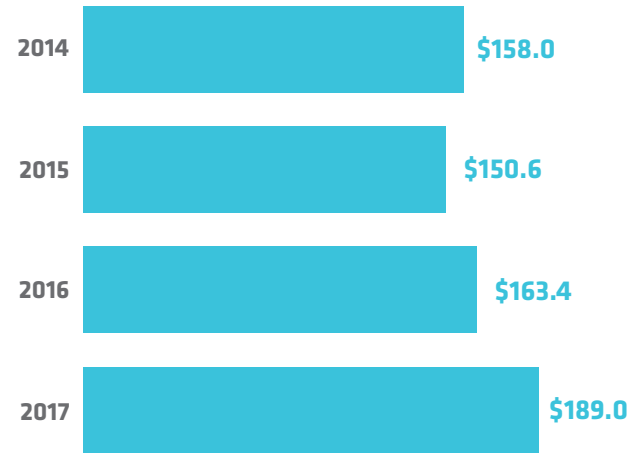
FY 2016



NIH Awards

\$ Millions

FY 2014-2017

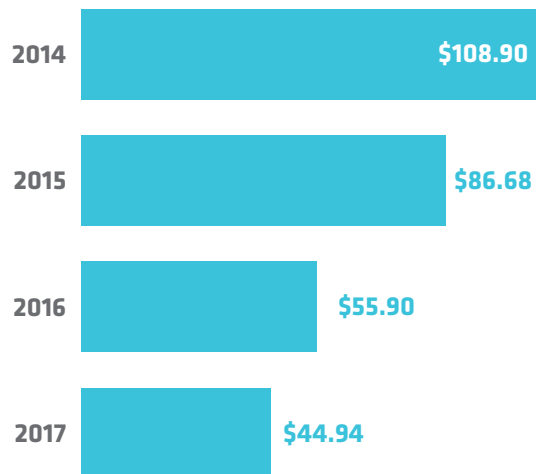


Bioscience Venture Capital in Arizona

Bioscience-Related Venture Capital Investments

\$ Millions

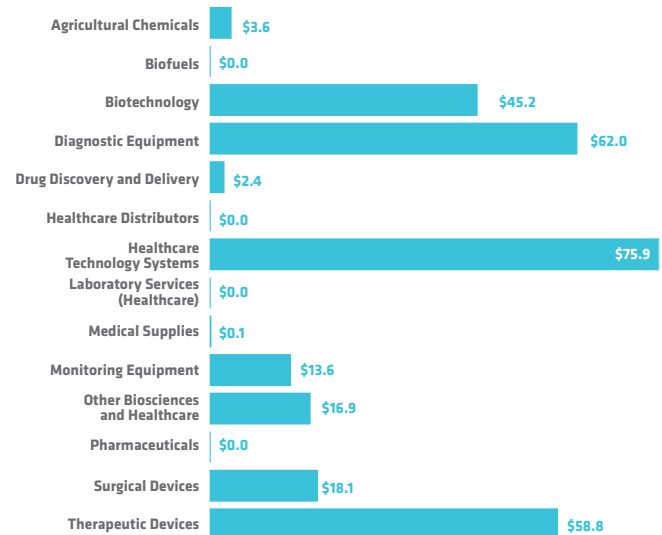
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Bioscience-Related Venture Capital Investments by Segment

\$ Millions

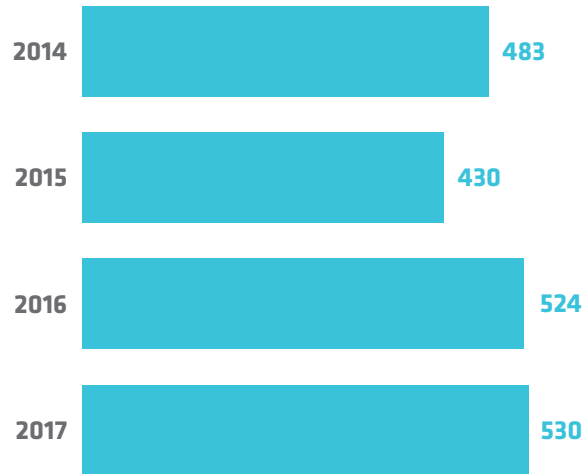
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Bioscience Patents in Arizona

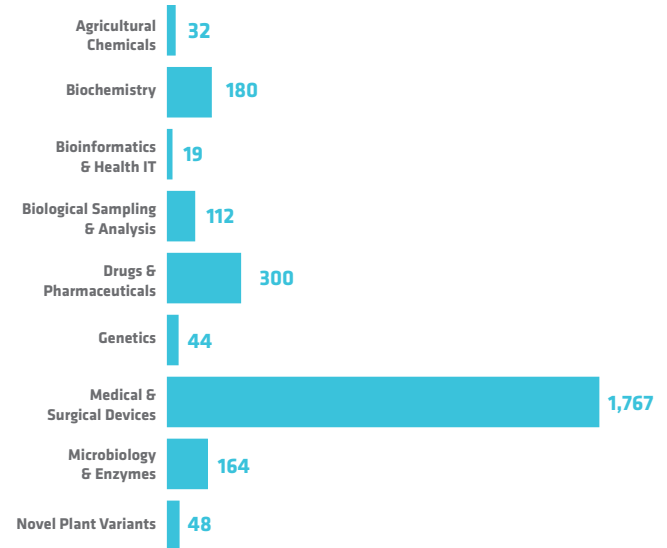
Bioscience-Related U.S. Patents

2014-2017



Bioscience-Related U.S. Patents by Segment

2014-2017



Source Notes

Employment, Establishments and Wages: U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages (QCEW), enhanced file from IMPLAN.

Employment Multipliers: IMPLAN state-level Input/Output models.

Academic R&D Expenditures: National Science Foundation (NSF) Higher Education Research and Development (HERD) Survey.

NIH Funding: National Institutes of Health, NIH Awards by Location & Organization (summary information within RePORT database).

Venture Capital: PitchBook Data, Inc.

Patents: U.S. Patent & Trademark Office data from Clarivate Analytics' Derwent Innovation patent analysis database. For a more detailed discussion of the data and methodology used, please see the Appendix to the full national report.